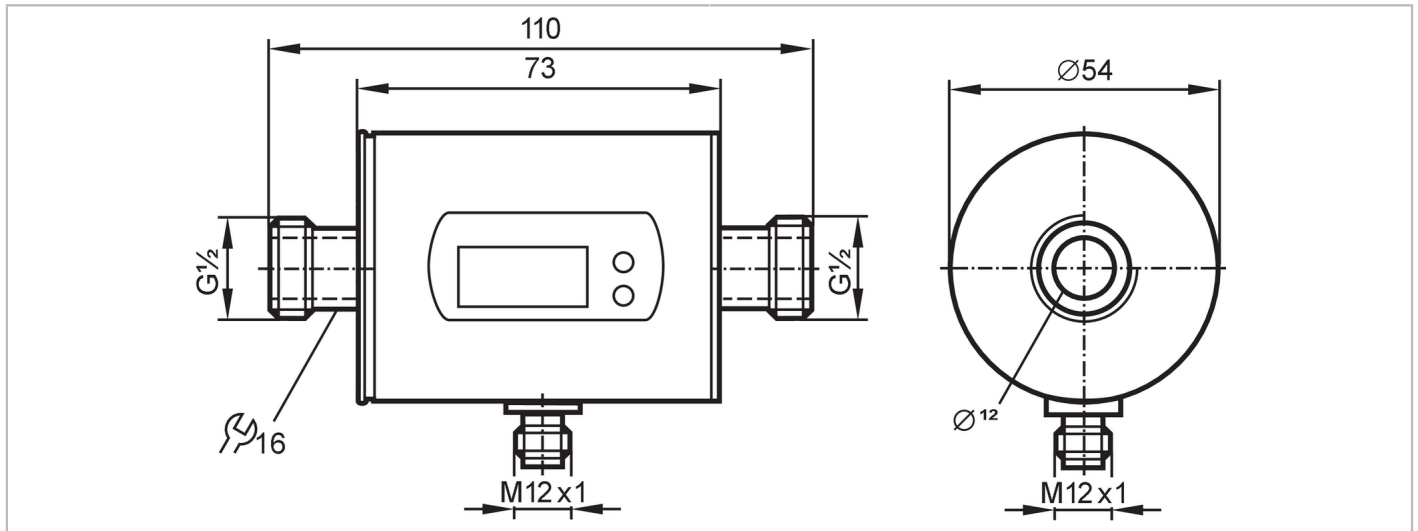


SM6001



Magnetic-inductive flow meter

SMR12GGXFRKG/US-100



Product characteristics

Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1	
Measuring range	1.5...396 gph	0.03...6.6 gpm
Process connection	threaded connection G 1/2 external thread DN15 flat seal	

Application

Special feature	Gold-plated contacts	
Application	totaliser function; for industrial applications	
Installation	connection to pipe by means of an adapter	
Media	conductive liquids; water; hydrous media	
Note on media	conductivity: $\geq 20 \mu\text{S/cm}$ viscosity: $< 70 \text{ mm}^2/\text{s}$ (40 °C)	
Medium temperature [°F]	14...158	
Pressure rating	16 bar	232 psi 1.6 MPa
MAWP for applications according to CRN	15.3 bar	1.53 MPa

Electrical data

Operating voltage [V]	18...30 DC; (to SELV/PELV)	
Current consumption [mA]	95; (24 V)	
Min. insulation resistance [MΩ]	100; (500 V DC)	
Protection class	III	
Reverse polarity protection	yes	
Power-on delay time [s]	5	
Measuring principle	magnetic-inductive	

Inputs / outputs

Number of inputs and outputs	Number of digital outputs: 2; Number of analogue outputs: 1
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Inputs

Inputs	counter reset
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Outputs

Total number of outputs	2
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Output signal	switching signal; analogue signal; pulse signal; IO-Link; (configurable)	
Electrical design	PNP/NPN	
Number of digital outputs	2	
Output function	normally open / normally closed; (parameterisable)	
Max. voltage drop switching output DC [V]	2	
Permanent current rating of switching output DC [mA]	200	
Number of analogue outputs	1	
Analogue current output [mA]	4...20; (scalable)	
Max. load [Ω]	500	
Analogue voltage output [V]	0...10; (scalable)	
Min. load resistance [Ω]	2000	
Pulse output	flow rate meter	
Short-circuit protection	yes	
Type of short-circuit protection	pulsed	
Overload protection	yes	

Measuring/setting range

Measuring range	1.5...396 gph	0.03...6.6 gpm
Display range	-475.5...475.5 gph	-7.925...7.925 gpm
Resolution	0.5 gph	0.01 gpm
Set point SP	3.5...396.5 gph	0.06...6.6 gpm
Reset point rP	1.5...394 gph	0.03...6.57 gpm
Analogue start point ASP	0...318 gph	0...5.3 gpm
Analogue end point AEP	78...396 gph	1.3...6.6 gpm
In steps of	0.5 gph	0.01 gpm

Volumetric flow quantity monitoring

Pulse value	0.01...30 000 000 gal	
Pulse length [s]	0,01...2	

Temperature monitoring

Measuring range [°F]	-4...176	
Resolution [°F]	0.1	
Set point SP [°F]	-2.5...176	
Reset point rP [°F]	-3.5...175	
Analogue start point [°F]	-4...140.5	
Analogue end point [°F]	31.5...176	
In steps of [°F]	0.5	

Accuracy / deviations

Flow monitoring

Accuracy (in the measuring range)	± (0,8 % MW + 0,5 % MEW)	
Repeatability	± 0,2% MEW	

Temperature monitoring

Accuracy [K]	± 2,5 (Q > 0,26 gpm)	
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Response times	
Flow monitoring	
Response time [s]	0.15; (dAP = 0, T19)
Delay time programmable dS, dr [s]	0...50
Damping process value dAP [s]	0...5
Temperature monitoring	
Dynamic response T05 / T09 [s]	T09 = 20 (Q > 0,26 gpm)
Software / programming	
Parameter setting options	Flow monitoring; quantity meter; Preset counter; Temperature monitoring; hysteresis / window; normally open / normally closed; switching logic; current/voltage/pulse output; start-up delay; display can be deactivated; Display unit
Interfaces	
Communication interface	IO-Link
Transmission type	COM2 (38,4 kBaud)
IO-Link revision	1.1
SDCI standard	IEC 61131-9
Profiles	Smart Sensor - SSP 0 Generic Profiled Sensor
	Function Device identification
	Function Process data variable
	Function Device diagnosis
SIO mode	yes
Required master port type	A
Process data analogue	3
Process data binary	2
Min. process cycle time [ms]	5
Supported DeviceIDs	Type of operation DeviceID
	default 570
Operating conditions	
Ambient temperature [°F]	14...140
Storage temperature [°F]	-13...176
Protection	IP 67
Tests / approvals	
EMC	DIN EN 60947-5-9
Shock resistance	DIN IEC 68-2-27 20 g (11 ms)
Vibration resistance	DIN IEC 68-2-6 5 g (10...2000 Hz)
MTTF [years]	160
Pressure Equipment Directive	Sound engineering practice; can be used for group 2 fluids; group 1 fluids on request
Mechanical data	
Weight [g]	546
Housing	cylindrical
Inlet pipe length	3 x DN
Outlet pipe length	1 x DN
Dimensions [mm]	Ø 54 / L = 110
Materials	stainless steel (316L/1.4404); PBT-GF20; PC; FKM; TPE

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Materials (wetted parts)	stainless steel (316L/1.4404); PEEK; FKM
Process connection	threaded connection G 1/2 external thread DN15 flat seal

Displays / operating elements

Display	Display unit	6 x LED, green (gpm, gph, gal, °F, 10 ³ , 1000 x 10 ³)
	switching status	2 x LED, yellow
	measured values	alphanumeric display, 4-digit
	programming	alphanumeric display, 4-digit

Remarks

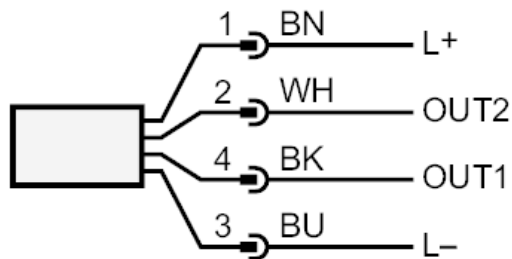
Remarks	MW = measured value
	MEW = Final value of the measuring range
Pack quantity	1 pcs.

Electrical connection

Connector: 1 x M12; coding: A; Contacts: gold-plated



Connection



- OUT1: colours to DIN EN 60947-5-2
 switching output volumetric flow quantity monitoring
 Pulse output quantity meter
 signal output Preset counter
 IO-Link
- OUT2: switching output volumetric flow quantity monitoring
 switching output Temperature monitoring
 analogue output volumetric flow quantity monitoring
 analogue output Temperature monitoring
 input counter reset
 Core colours :
- BK = black
 BN = brown
 BU = blue
 WH = white

SM6001

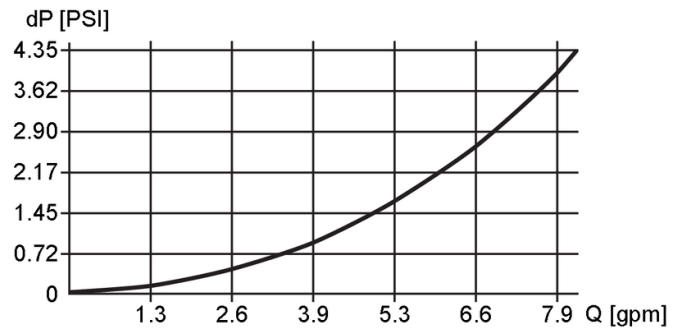


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Diagrams and graphs

Pressure loss



dP Pressure loss

Q volumetric flow quantity